

IN THE CLAIMS:

Please amend Claims 1, 6, 11 and 12 as shown below. The claims, as pending in the subject application, now read as follows:

1. (Currently amended) A data conversion method of performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data, comprising the steps of:

- setting grid positions of the multi-dimensional look-up table;
- generating a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation;
- obtaining the weight values corresponding to the plural components of input image data by referring to the weight table;
- obtaining output data of grid points of the multi-dimensional look-up table which corresponds to the input image data;
- calculating the processed image data, which corresponds to the input image data, by interpolation using the obtained output data and the obtained weight values, wherein the interpolation is executed by an integer ~~a floating point~~ computation; and
- normalizing the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value.

3. (Original) The method according to claim 1, wherein the sufficiently large value is a power of 2.

4. (Previously amended) The method according to claim 1, wherein the grid points are set in non-uniformity, and the grid positions corresponding to each of the components are set the same.

5. (Previously amended) The method according to claim 1, wherein the input image data is expressed in one of RGB, CMY, and XYZ color spaces.

6. (Currently amended) A data conversion apparatus for performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data, comprising:

a setting section, arranged to set grid positions of the multi-dimensional look-up table;

a generator, arranged to generate a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation;

a first obtaining section, arranged to obtain the weight values corresponding to the plural components of input image data by referring to the weight table;

a second obtaining section, arranged to obtain output data of grid points of the multi-dimensional look-up table which corresponds to the input image data;

a computation section, arranged to calculate the processed image data, which corresponds to input image data, by interpolation using the obtained output data and the obtained weight values, wherein the interpolation is executed by an integer ~~a floating point~~ computation; and

a normalizing section, arranged to normalize the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value.

11. (Currently amended) A computer program product storing a computer readable medium having a computer program code, for a data conversion method of performing image processing on image data expressed in plural components by using a multi-dimensional look-up table, and outputting processed image data, the product comprising process procedure codes for:

setting grid positions of the multi-dimensional look-up table;

generating a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation;

obtaining the weight values corresponding to the plural components of input image data by referring to the weight table;

obtaining output data of grid points of the multi-dimensional look-up table which corresponds to the input image data;

calculating the processed image data, which corresponds to the input image data, by interpolation using the obtained output data and the obtained weight values, wherein the interpolation is executed by an integer ~~a floating point~~ computation; and

normalizing the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value.

12. (Currently amended) A computer readable medium storing recorded data which is used in data conversion processing to process image data expressed in plural components by using a multi-dimensional look-up table, and to output processed image data, the recorded data comprising:

data for indicating grid positions of the multi-dimensional look-up table;

data for generating a weight table to store weight values corresponding to the plural components based on the set grid positions, wherein the weight values are calculated by an integer computation, and the weight table is used for obtaining the weight values corresponding to the plural components of input image data; and

data representing a computation for calculating the processed image data corresponding to the input image data by interpolation using output data of grid points of the multi-dimensional look-up table corresponding to the input image data, and the obtained weight values, wherein the interpolation is executed by an integer ~~a floating point~~ computation; and

data for normalizing the process of calculating and obtaining the weight values and the interpolation by a sufficiently large value.

REMARKS

Claims 1, 3 to 6, 11 and 12 are pending in the application, with Claims 1, 6, 11 and 12, the independent claims, having been amended herein. Reconsideration and further examination are respectfully requested.

Claims 1, 6, 11 and 12 have been amended to correct an error in Applicant's previous Amendment After Final Rejection, dated January 21, 2003. In particular, Applicant previously incorrectly amended the independent claims to state that the feature of the interpolation is executed by "a floating point computation". However, this feature was intended to state that the interpolation is executed by "an *integer* computation". The use of an integer computation to perform the interpolation is supported by Equations 6' (one-dimensional interpolation), 8a and 8b (two-dimensional interpolation), and 10a to 10f (three-dimensional interpolation), and their accompanying descriptions, at pages 11 to 17 of the specification.

For example, in the one-dimensional interpolation, Equation 6' inputs values u' , L , P_0 , and P_1 , wherein the value of u' is an integer as shown in Equation 5', the value of L is a power of two (integer) as described at page 12, line 8, and the values of P_0 and P_1 are grid values (integers). Therefore, Equation 6' performs an integer computation.

In this manner, the present invention performs interpolation quickly by using an integer computation instead of a floating point computation, and a decline in the precision of the interpolation by using an integer computation is prevented.

Accordingly, Applicant requests favorable review and early passage to issuance of the application.

Applicant's undersigned attorney may be reached in our Costa Mesa, CA office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,


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